

REMARKS/ARGUMENTS

Claims 17-19 are objected to as depending from a canceled claim. This has been corrected by the above amendment.

Claims 1-15 and 17-21 are rejected as obvious over Thomas and as obvious over Matsumoto et al. Claims 1-15 and 17 are also rejected for obviousness-type double patenting over claims 1-20 of Thomas alone or in view of Matsumoto et al.

Claim 1 has been amended to emphasize the differences between Applicants' process and those of the two references. The language added to claim 1 is partly taken from claim 11 and thus is deemed supported.

With respect to the double patenting rejection including both Thomas and Matsumoto et al., the two references are not combinable. They deal with production of two different types of steel and through two different types of processes. Thomas relates to production of carbon steels, while Matsumoto relates to stainless steels. Thomas heats up the carbon steel to a temperature at which it still is a solid (up to about 1150°C; see col. 5 lines 16-19) while Matsumoto et al. heat it up to a molten state (see, e.g. col. 7 lines 18-20 and col. 8 line 24) followed by extremely rapid quenching (see, e.g. col. 7 lines 29-36). The disclosures of these two references simply would not be combined by those skilled in the art, and definitely not as proposed by the examiner.

Withdrawal of the rejection for double patenting over Thomas in view of Matsumoto et al. is respectfully requested.

Again, Thomas does not disclose or claim a process wherein the alloy is cold worked without intermediate heat treatment. The section cited by the examiner simply states that the alloys can be cold worked. Applicants' claimed process is not obvious from Thomas' process and certainly not from any combination of Thomas with Matsumoto et al.

For the same reasons, Applicants' claims are not obvious variations of Thomas' claims, and the double patenting rejection over this reference should be withdrawn.

For the same reasons, the rejection of claims 1-15 and 17-21 as obvious over Thomas should be withdrawn. Thomas discusses cold forming only very generally and does not at all disclose cold forming without intermediate heat treatment.

Withdrawal of the rejection of claims as obvious over Thomas is respectfully requested.

Claims 1-15 and 17-21 are rejected as obvious over Matsumoto et al. However, this reference does not in any way render the present claims obvious.

Matsumoto et al. disclose a process for producing stainless steels, and products obtained by that process. Their process utilizes substantial amounts of alloying materials and produces stainless steels whereas the claimed process produces carbon steel that consists of laths of martensite alternating with from about 0.5% to about 15% by volume of films of retained austenite. Claim 1 as currently amended calls for cooling a solid carbon alloy steel having a homogeneous austenite phase with all alloying elements in solid solution whereas in Matsumoto et al. the alloy is melted and then rapidly quenched (see, e.g. col. 4 lines 20-21, 40-42, 53-55 and 67-68, col. 5 lines 3-4, 17-20 and 33-34, and col. 7 lines 18-36).

The examiner expressed a belief that at temperatures that may be used in Applicants' process of 1150°C the steel would be molten. However, that is not correct; at these temperatures the steel is still solid, see, e.g. p. 7 line 32. Matsumoto et al. on the other hand, must first melt their alloys before rapidly quenching them.

Finally, Matsumoto et al. do not produce steels with a dislocated lath structure of laths of martensite alternating with from about 0.5% to about 15% by volume of films of retained austenite. In Matsumoto et al. ultrafine precipitates (of alloying elements not contained in Applicants' product) are uniformly dispersed in a mixture of a lath martensite and a small amount of an austenitic phase. There is no disclosure of laths of martensite alternating with films of austenite. In addition, the term "austenitic phase" indicates to those skilled in the art a structure of austenite grains, not films.

Withdrawal of the rejection of claims as obvious over Matsumoto et al. is respectfully requested.

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance and an action to that end is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 415-576-0200.

Respectfully submitted,

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